

68. (New) A vehicle including a load sensing system according to claim 64.

69. (New) A vehicle including a load sensing system according to claim 65.

REMARKS

In an Office Action dated November 21, 2002, the Examiner (1) objected to the drawings, (2) objected to the specification because of lack of headings; (3) rejected claims 32-48, 61 and 62 under 35 U.S.C. § 112, ¶ 2, as being indefinite; (4) rejected claims 32-35, 42-45, 47, 49-51, and 58-60 under 35 U.S.C. § 102(b) as being anticipated by GB-836100; and rejected claims 36, 40, 41, 46, 56, 57, and 62 under 35 U.S.C. § 103(a).

The Examiner made two objections to the drawings: (1) failure to comply with 37 CFR 1.84(p)(5) and (2) failure to comply with 37 CFR 1.83(a). Concerning the first objection, based on the Examiner's suggestion, Applicant has amended the specification to add the reference signs in the description. Accordingly, Applicant respectfully seeks withdrawal of that objection.

Regarding the second objection, the Examiner's objection relates to claims 32, 34, and 62. Specifically, according to the Examiner certain elements recited in those claims are not shown in the drawings. Applicant has canceled claims 32, 34, and 62 accordingly, Applicant respectfully seeks withdrawal of this objection. Applicant further notes that based on the above two actions, the drawings need no corrections.

Accordingly, Applicant respectfully seeks approval of these drawings.

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With respect to the rejection of claims 32-48, 61 and 62 under 35 U.S.C. § 112, ¶ 2, as being indefinite, Applicant has canceled those claims. Thus, Applicant believes this rejection no longer applies.

Further, regarding the substantive rejection of claims, Applicant has canceled claims 32-35, 42-45, 47, 49-51, and 58-60, which are rejected under 35 U.S.C. § 102(b). Thus, this rejection no longer applies. Applicant has also canceled claims 36, 40, 41, 46, 56, 57, and 62, which were rejected under 35 U.S.C. § 103(a). Thus, this rejection no longer applies, as well.

Newly added claims 63-69 are patentable because the cited art does not teach or suggest, among other things, a control means for selecting one of reference fluid pressures on the basis of a sensed gas pressure in a suspension unit and a second air bag for urging a valve element towards its maximum throttling position, based on the selected reference fluid pressure.

With respect to the Examiner's characterization of the cited art, Applicant notes that GB836100 is directed to a load-dependent braking system in which "the braking is arranged to be dependent on ... a mean of the pressures ... in two compressed air springs one on each end portion of a vehicle axle, such mean pressure serving as load-dependent control pressure which is arranged to vary the braking pressure." Col. 1, line 43 - Col. 2, line 51. To achieve this end, the cited reference discloses a trailer control valve 15 connected to a lever 17, which is moved by piston rod 53, which is further connected to pistons 48 and 50 (loaded by a spring 51). See, e.g., page 2, col. 1, lines 2-9. GB836100, however, does not teach or suggest among other things, a control means for selecting one of a plurality of reference fluid pressures on the basis of a

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sensed gas pressure in a suspension unit and a second air bag for urging a valve element towards its maximum throttling position, based on the selected reference fluid pressure.

The second cited reference, Stumpe et al. (U.S. Patent No. 5,615,931) is directed to brake control system which requires less computational power. Col. 1, lines 34-37. The Examiner, in rejecting claim 40, stated that Stumpe et al. teaches in col. 4, lines 55-60, col. 5, lines 61-64, and col. 6, lines 60-66 "supplying a number of reference pressures." Office Action, page 9, paragraph 13. Applicant respectfully notes that the cited portions merely relate to storing in a controller actual braking pressures to be used at different load states (at a fully loaded state or a half loaded state, etc.). Stumpe et al., however, does not teach or suggest, any load sensing system having, among other things, a control means for selecting one of a plurality of reference fluid pressures on the basis of a sensed gas pressure in a suspension unit. It also does not teach or suggest any load sensing system including a second air bag for urging a valve element towards its maximum throttling position.

Further, WIPO 93/19959 is directed to an improved suspension system, including the use of auxiliary compensating bellows 30, which is a compact short stroke air bag. See page 10, lines 16-17. That auxiliary compensating bellows 30 makes up compensating means 12, which mimics the operation of bellows 10 and 11, which comprise the suspension system. See page 9, lines 26-33. But, it does not teach or suggest, among other things, a control means for selecting one of a plurality of reference fluid pressures on the basis of a sensed gas pressure in a suspension unit

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and a second air bag for urging a valve element towards its maximum throttling position, based on the selected reference fluid pressure.

Based on the above deficiencies of the cited art, Applicant believes that newly presented claims 63-69 are patentable and respectfully seeks allowance of these claims.

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: March 21, 2003

By: _____



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APPENDIX TO AMENDMENT OF MARCH 21, 2003
VERSION WITH MARKINGS TO SHOW CHANGES MADE

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

On page 1, please insert --FIELD OF THE INVENTION-- before line 3 and below the heading: Load Sensing System;

On page 1, please insert --BACKGROUND OF THE INVENTION-- after line 6 and before line 5;

On page 5, please insert --SUMMARY OF THE INVENTION-- after line 15 and before line 16;

On page 9, please insert --DESCRIPTION OF THE INVENTION-- after line 6 and before line 7;

On page 14, please amend the second paragraph (lines 5-9) as follows:

The control circuit 31 is seen in detail in figure 4, and comprises a memory (M) 40 for storing data, a processor (P) 41, ROM memory 42 for storing operation programs, and RAM 43 providing working memory for the processor 41;

On page 14, please amend the third paragraph (lines 10-16) as follows:

Sensor inputs from the ride height sensor (RHS) 30 and the pressure transducer 34 (or pressure sensor (PS)) are provided to control circuit 31, as an inputs from the input device 32. A display 43 may be provided to display parameters such as desired

ride height. The control circuit provides control signals to a ride height value (RHV) 33, and to an electromechanical valve 35; and

On page 16, please amend the first full paragraph (lines 3-17) as follows:

The memory 40 of control circuit 31 may be provided with a look-up table (LUT) 40a correlating a range of values of ride height and suspension air bag pressure with gross vehicle weight, so that for any combination of sensed values of pressure and ride height, the gross vehicle weight can be immediately read out from the table. Valve 35 can then be controlled on the basis of this gross weight value, without having to wait for the ride height control to inflate or deflate the air suspension to reach the desired ride height value for sensing the air bag pressure and thereby obtaining the gross weight. The look-up table 40a may be generated in a calibration process wherein the ride height is varied at different gross weights, and correlating pairs of sensor outputs from the ride height and air pressure sensors are noted for each loading state.

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